BROOKHAVEN BULLETIN
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BROOKHAVEN NATIONAL LABORATORY

Mort Rosen

Gerhart Friedlander

Friedlander Retires

Gerhart Friedlander, one of Brookhaven's distinguished chemists, retired yesterday after 33 years at the Laboratory. Friedlander has been on the staff since January 1948 and was Chairman of the Chemistry Department from 1968-1977. His researches have been in the chemical effects of nuclear transformations, the properties of radioactive nuclei, high-energy nuclear reactions and, most recently, solar neutrino experiments. In addition to his many contributions to the Chemistry Department, Friedlander played an important role in a number of Laboratory functions: he was a member and first chairman of the Brookhaven Council, and chairman of the search committee for a new Lab director in 1972. He was elected to the National Academy of Sciences in 1973 and the American Academy of Arts and Sciences in 1974 and was recently appointed to the NAS Assembly of Mathematical and Physical Sciences.

Friedlander was the first member of the scientific staff to take advantage of the gradual retirement policy. When he stepped down as Chairman of the Chemistry Department in 1977, he went on 80% time. Following a year in Germany, he returned to work at BNL on a 60% basis — three days a week. He says he was delighted with the plan and would strongly recommend it to others as "a good way of easing into retirement."

Even though he is now formally retired, Friedlander plans to remain involved with scientific matters at the Laboratory. He will be a consultant to the Chemistry Department, and, in this capacity, will continue to be active on the solar neutrino experiment.

The latest edition of his textbook, "Nuclear and Radiochemistry," which he completed in Germany as a Humboldt Award winner, will be published in June. But he will still not be the possessor of much spare time. He will concentrate even more now on the activities of Planned Parenthood, of which he is Suffolk County president. He will also be occupied by committee work at Lawrence Livermore, the G.S.I. Laboratory in Darmstadt, Germany and the National Academy of Sciences. And, when not traveling, he plans to catch up on his reading and spend more time on his musical interests at his home in Blue Point.

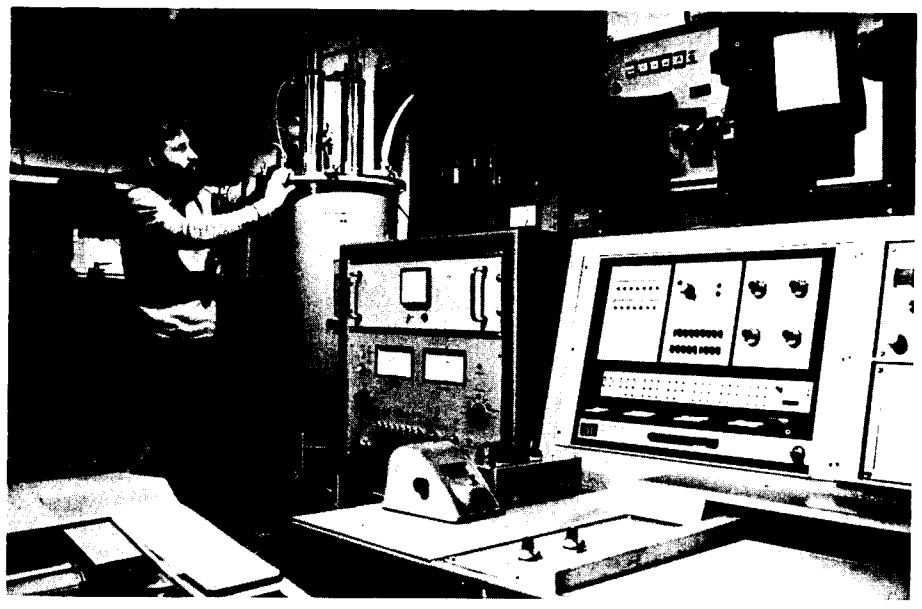
From Station NMR In Biology

Down on the ground floor of the Biology Department is a machine which is a radio transmitter and receiver all rolled into one. It doesn't blare out the latest top ten hits, however. It is used to do nuclear magnetic resonance, a type of radio frequency spectroscopy.

Nuclear magnetic resonance (NMR) was first developed about 35 years ago. It is commonly used to identify organic molecules by pinpointing molecular structure. While some of this is still done on the machine at BNL, it is generally used for more sophisticated applications, for example, studies of metabolism in intact organs.

The machine is the responsibility of Alan McLaughlin, an Associate Biophysicist who came to BNL in 1977. Briefly, this is how it works. A sample is put between the radio-transmitter and receiver. The transmitter beams radio waves at the sample, which becomes excited and gives off radio signals, much the same way an alarm clock glows in the dark after being exposed to ultraviolet light in sunshine. Signals coming out of the sample are picked up by the receiver.

Different atoms give off signals at different frequencies. The machine can detect carbon at about 95MHz (95 million cycles per second), phosphorus at 145 MHz, and hydrogen at 360 MHz. The signals for those three elements, major constituents of biological molecules, are reasonably strong and distinctive. Like tuning a radio to catch a particular station, the machine can be tuned to study particular atoms and to identify the chemical environment of these atoms in complex molecules.


Doug Humphrey

Alan McLaughlin inserts a sample into a machine which he uses to study structure of cellular membranes and metabolism of intact organs by a technique called nuclear magnetic resonance.

All of this information can be represented in picture form by a spectrum. The location of a peak on a horizontal axis identifies a signal as being carbon, phosphorus or hydrogen, and the height of a peak tells the amount.

One of the first studies McLaughlin did on the machine was to look at metabolism - how food gets turned into energy. With other techniques, organs of laboratory animals are chopped into pieces and then analyzed chemically, which means that one cannot follow change as a function of time. NMR spectroscopy, on the other hand, is noninvasive and nondestructive. Whole organs can be maintained in a viable state in the machine and analyzed for metabolites containing either phosphorus or carbon. For example, McLaughlin has used phosphorus NMR to study adenosine triphosphate (ATP), one of the important cellular forms of energy. Also, working with McLaughlin, Robert Shulman and Sheila Cohen from Bell Laboratories have used carbon NMR to study the chemical pathways by which food molecules are broken down and reformed into larger molecules. Both of these studies were done with intact mouse liver.

(Continued on page 2)

Reduction In Force

On April 24, Lab Director George Vineyard announced that out of the 500 job reductions required because of program cuts and increased costs of operation, approximately 300 would be by layoff. In the first wave, 176 employees have now been informed that their jobs are eliminated. Most of these employees will leave the Laboratory on May 8.

The job categories involved are administrative and supervisory, scientific professional, technical support, clerical, craft, and maintenance, and are almost equally divided between the scientific departments and the support divisions.

To help employees affected by the layoff, the Personnel Office has supplied each one with a packet which includes information on benefit plans, unemployment insurance, job opportunities and employer listings, individual employment history, and resume guide. Employees will receive severance pay according to age and years of service, and most will be able to meet the eligibility requirements established by N.Y. State for unemployment insurance. For one year following date of termination, they will be given top priority for any Lab job vacancies which become available. In addition, they may place ads in the Brookhaven Bulletin for a period of three months, will be able to have their resumes reproduced on site, and will be reimbursed for any courses they were taking during the current semester.

The second wave of layoffs is expected to be concentrated in the scientific departments. Dr. Vineyard stated that these notifications would be made by the end of June. Decisions have been delayed because there are still a number of program areas where funding for FY 1982 has not been finally determined.

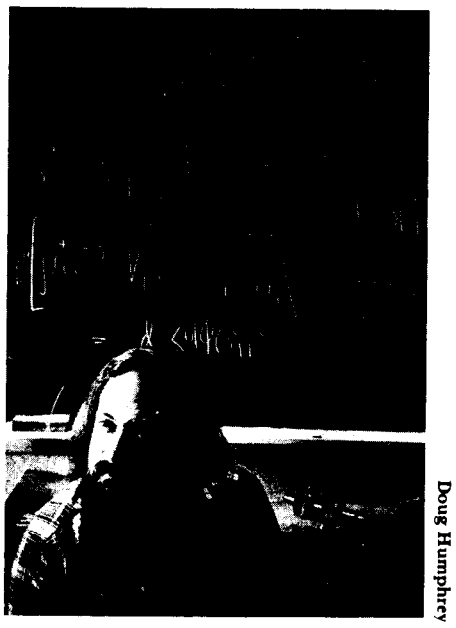
bnl Lecture

More On Quarks

Physicist Michael Creutz will give the next BNL Lecture on Wednesday, May 13 at 8 p.m. in Berkner Hall. A particle theorist, Creutz has developed computer techniques which provide strong evidence that quarks, basic constituents of most elementary particles, cannot be isolated. His lecture is titled "Roulette Wheels and Quark Confinement."

Computer simulation of statistical systems represents an ancient tool of the condensed matter physicist. Creutz says that quite recently, however, particle theorists have applied this technique to relativistic quantum field theory and, in particular, to the study of quark confinement. There is now strong numerical evidence that a gauge theory of the nuclear interaction can simultaneously display the phenomena of asymptotic freedom, (weak interquark forces for short separation) and imprisonment of quarks inside physical elementary particles.

Creutz and his colleagues have been using Monte Carlo simulation techniques to do computer "experiments" on space-time "crystals." In this way, they find interesting phase structure which has a direct bearing on the qualitative nature of the interquark force. They have begun to obtain quantitative information on the parameters relating the long and short range interactions and on the masses of new particles which are bound states of gauge fields alone.


Doug Humphrey

Michael Creutz

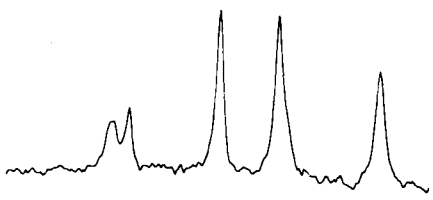
Creutz received his Ph.D in physics from Stanford University. He spent two years as a Fellow of the Center for Theoretical Physics at the University of Maryland before coming to BNL in 1974. He is a member of the American Physical Society.

A buffet supper is served at 6:30 p.m. at the Brookhaven Center before the lecture. Many find it convenient and it is a pleasant way to meet members of other departments. Reservations for the buffet should be made in advance by calling Ext. 3541 before 5 p.m. on the day of the lecture.

NMR (Cont'd)

About a year ago, McLaughlin began studying the structure of cellular membranes. The surface of membranes is the site where hormones and drugs interact with a cell, and where many immunological and enzymatic functions occur. NMR can give information on the motion of specific molecules in membranes, and thus can provide a better understanding of these processes.

McLaughlin says nuclear magnetic resonance is a good technique for doing dynamic studies of biological molecules. The NMR machine is used by other scientists from Brookhaven and from academic institutions in the northeast to look at a wide range of systems such as antibiotics, hormones and immunoglobulins.



Information from nuclear magnetic resonance is graphically represented by a spectrum. This spectrum shows signals from different phosphorus-containing metabolites in a mouse liver. The three peaks on the right come from the three phosphate groups in adenosine triphosphate, one of the important cellular forms of energy. The peaks on the left come from free phosphate and phosphate bound to sugars. Relative heights of the peaks indicate relative concentrations of metabolites. The total frequency width of the spectrum is 10 kHz.

Seminars For Women

The Office of Continuing Education, State University of New York at Farmingdale, offers a Certificate Program commencing May 4, for ten weeks. The seminars will cover such topics as "Managing Stress," "Communicating with Confidence," and "Making Meetings Work." All seminars will be held in the Newsday Auditorium, Melville, from 6-8 p.m. Participants may register for the full ten sessions at $125.00, or selected seminars at $15.00 each. Fees will not be reimbursable under the Laboratory's tuition refund policy. Further information may be obtained by calling the Women's Center at SUNY-Farmingdale (516-420-2382), or Gail Williams (Ext. 3338).

Looking Good Takes Looking After

Mother Nature is not tidy. Although she is artistic and creative and capable of great beauty, her snow falls at random and her grass grows ever higher. For beauty, look to Mother Nature. For neatness and a path through those snow drifts or for a well-trimmed lawn, BNL'ers must look to the Operation & Maintenance section of Plant Engineering's Site Division.

A large part of this section's many responsibilities is outdoor work intended to either assist or pick up after Mother Nature. Keeping in step with her seasonal moods, this is the time of year when the section stores its snow plows and lubricates its lawnmowers.

Since the fall, when temperatures first dropped below freezing, most of the section's efforts have been directed toward keeping the Lab's 27 miles of paved roads and 45 acres of paved service areas and parking lots clear and safe. Six snow plows and various other pieces of snow removal equipment were enlisted whenever roads needed clearing or sanding due to snow or ice. "We got hit really hard around Christmas and New Years," said Jack Hennessy, Superintendent of the Site Division, "and we had a number of calls for sanding the roads. But otherwise, this winter, and last winter were fairly mild."

Despite that mildness, Roy Barone, General Supervisor of the Operation and Maintenance section, explained, "There's always a little catch-up this time of year because you lose some trees and shrubs over the winter." The elements take their toll in other ways as well, making it necessary to repaint lines in the parking lots, repair potholes, clean up sand in the streets and catch basins, and take down snow fences.

Of course, most present efforts are focused on readying the Lab's 12 riding machines for a job which will be virtually continuous from now through next September - mowing the 300 acres of Laboratory lawn. It's never finished," Barone explained, "We start at one end of the Lab and go to the other, and by the time we get back, we have to start again."

It's not only Mother Nature that the site staff is tidying up after when they're out on their lawnmowers. "It's our own BNL people also," Hennessy said. "you'd be surprised what we pick up around here." Topping the Lab's litter list are bottles, cans, styrofoam cups, paper napkins and plates, and paper bags.

Isn't a little litter to be expected? As Barone said, "it's not just 'a little' litter. Over the period of one year, it takes an average of four people working full time just to clean up the stuff that people throw out of their cars. And this is a year-round problem. It's a little easier in the summer because we're out there mowing anyway, but that average doesn't even count special details, like cleaning up after a picnic."

"Good housekeeping habits would certainly make our job easier," Barone continued, "especially with our reduced maintenance budget. There are plenty of jobs which get put off simply because our people are busy picking up other people's garbage. If everybody would put something in the receptacles, we'd be delighted!"

Hennessy suggests that people "take pride in the site. Treat it like your own back yard." And if that doesn't work, he sees assistance coming from another quarter. "The bottle bill should help us. People don't throw away deposit bottles."

While cleaning up after people can be irksome, tidying up after Mother Nature is generally a pleasure. "We have the opportunity to help make the Lab as attractive as possible," Hennessy said, "and at this time of year, anyone who works outdoors really appreciates it. Everyone wants to be outside on a spring day."

— Anita Cohen

A bagful of cans and paper items was picked up by Building Grounds Utility Man, Howard Bell, Jr. near the Employee's Recreation Area on a recent Monday. This assortment is typical of the kind of litter that can accumulate in one spot over a weekend.

—photo by Humphrey

Still No Word

As of this writing, no word has been received on BNL's application to become a member of Teachers Federal Credit Union. It is awaiting decision by the National Credit Union Association. You will be informed as soon as the outcome is known.

Seminar On Risk

Dr. Herbert Inhaber, Oak Ridge National Laboratory, will present a seminar entitled "Is Small Brutal? Risk As If People Really Mattered," on Monday, May 4, at 2 p.m. in the Physics Seminar Room.

Those familiar with the literature on risk assessment will recognize that Dr. Inhaber is the author of AECB-1119, "Risk of Energy Production." This was a pioneering effort to take into account the entire cycle of producing energy, including material gathering, transport, fabrication, construction, operation and maintenance, decommissioning and disposal. In addition to the fossil and nuclear fuel cycles, Inhaber also considered such alternatives as solar, wind-power and ocean thermal systems.

The seminar is sponsored by DEE, DNE and S&EP.

Brookhaven House Is A Star

It has been learned that the film "Building The Brookhaven House" has been given the prestigious Cine Golden Eagle Award by the Council of International Non-Theatrical Films. The 16mm color film was selected as the best technical film in America for world distribution. It was produced by Aram Nowak Associates for DOE. Ralph Jones, BNL Project Manager for the house, and other DEE Staff, assisted in developing the script and selecting the film footage.

Public interest in seeing the Brookhaven House continues unabated. At a meeting of the Metropolitan Solar Energy Society, held at Brookhaven on Saturday, the Brookhaven House was the star attraction. Berkner Hall was filled to the rafters with members of the Society, architects and homeowners. The audience of 500 saw the award-winning film, were given a briefing on the performance of the house to date, and toured the structure itself.

Science Careers For Women

Doug Humphrey

From left, Ellen Gannon, Betty Heldman, Victoria McLane and Gail Williams prepare an exhibit in Berkner Hall. Along with Louise Hanson, they make up the organizing committee for a day-long program called "Careers for Women in Science," to be held at the Lab on Saturday, May 9. The program is aimed at making female students aware of career options and employment trends in science, math and engineering. It will run from 10 a.m. to 4 p.m. and is open to high school students, their parents, science teachers, and counselors. There is no registration fee for the program, which is sponsored by the BNL Women in Science organization. For more information, contact Victoria McLane, Ext. 2902.

Equipment Demo

AM/Jaquard Systems will demonstrate their word processing, OCR, and phototypesetting systems on Thursday and Friday, May 7 & 8, from 11 a.m. to 4 p.m. in Room C, Berkner Hall.

Among the systems on display will be the J100 Shared Logic System, the J500 Standalone System, the AMtext 425, the AM Comp/Edit System, and the ECRM/OCR.

Anyone interested is invited to attend.

Arrivals & Departures

Arrivals

Reinhold Schlotz .....Chemistry

Departures

Samuel W. Beeler, Jr. .....S. & Env. Prot.
Charlotte Rappe .....Supply & Materiel
Karl Rosenbaum .....Energy & Env.
Richard D. Stoner .....Medical

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In Appreciation

We wish to thank all of Emil's friends for their kind expressions of sympathy.

— the Bernatzky Family

•

We deeply appreciate all your expressions of caring and sympathy during Herman's illness and passing.

— the Drews Family

Service Awards

The following employees received service awards during the month of April.

Thirty Years

Dorothy K. German .....S. & Env. Prot.
Julius B. Godel .....Chemistry
Bernard F. McLaughlin .....S. & M.
Lawrence Schiro .....Central Shops

Twenty-Five Years

Carl I. Anderson .....Nuclear Energy
Margaret Dienes .....Tech. Info.
Charles R. Staal .....Accelerator
Frank R. Thomsen ..... Energy & Env.
David R. Wales .....Nuclear Energy

Twenty Years

Stanley S. Dobzeniecki ..... Plant Engrg.
Nancia Gargliardo .....Staff Services
Andrew P. Hull ..... Safety & Env. Prot.
John M. Olson .....Biology

Ten Years

Barbara A. Pringle ..... Cont. & Procure.

Product Exhibit

About 20 manufacturers and distributors of laboratory apparatus and supplies will display their products at an exhibit in Room B, Berkner Hall on Friday, May 8, from 9 a.m. to 2 p.m. In addition, door prizes will be awarded every hour.

Representatives from the following companies will be on hand: Beckman Instruments, Brinkmann Instruments, Corning Glass Works, I.E.C., J.T. Baker Chemical Co., Kimble Co., Labline Co., Labconco Corporation, Mallinckrodt, Manostat, Inc., Nalge Company, Orion Research, Precision Scientific, Yellow Springs Instruments.

Distributors present will include American Scientific Products, Curtin-Matheson Scientific, Arthur H. Thomas Co., Fisher Scientific Co., and V.W.R. Scientific Co.

Camera Club

The next meeting of the Camera Club will be on Monday, May 4, at 5:30 p.m. in the Recreation Building. Included on the program are two audiovisual slide presentations: Advanced Black & White Printing, and Color Printing from Color Negatives.

Remember the upcoming Photography Exhibit, June 1 to June 5, at Berkner Hall. Submit your exhibit prints by May 21, to Lew Jacobson, Bldg. 134C, Ext. 5193; Said Mughabghab, Bldg. 197D, Ext. 2902; or Ripp Bowman, Bldg. 911B, Ext. 4672.

New BERA Club

All BNL employees are invited to the first organizational meeting of a new BERA activity, the Afro-American Culture Club, at 5:00 p.m. on Monday, May 11 in Berkner Hall (Room B).

The aims of the AACC are to promote Afro-American cultural awareness, encourage intercultural exchange, and help achieve a positive multi-ethnic work environment. It is anticipated that these aims will be achieved by sponsoring a series of educational, cultural, and social events featuring Afro-American talent.

Phone Facts

Lack of an electro-magnetic field in GTE handsets causes employees who rely on hearing aids to experience hearing difficulties when using the new GTE telephones. Fortunately, the problem is easily solved by replacing the standard telephone earpiece with another version.

If you use a hearing aid and are not hearing well on the phone, please notify the Telecommunications Office, Ext. 2000, by Friday, May 8, so a sufficient number of new earpieces may be ordered to meet the needs of BNL employees.

Commenting on other aspects of the recent cutover to the new GTE telephone system, Bill Webster, Manager of Staff Services, said, "Up till now we've been trying to concentrate on trouble and 'no service' calls. Now we've started to tackle the ILR's. By the middle of May we expect to have attained some degree of normality."

Swimming Pool

A new four-month pool season will begin on Monday, May 11. Season tickets may be bought at the pool during scheduled open hours starting on that day.

Fees:

Season Tickets (fees not prorated)	
Individual Membership	$20.00
Family Membership	30.00
Daily Admissions	
Employee/Family Member	1.25
Guest	1.75

Schedule:

Monday through Friday
(Employees Only)
11:00 a.m. to 1:30 p.m.
(Employees/Families/Guests)
5:00 p.m. to 9:30 p.m.

Saturday and Sunday
(Employees/Families/Guests)
1:00 p.m. to 6:00 p.m.

Note: The swimming pool is closed on all Laboratory holidays.

Guest Ruling (Applies to all recreation facilities)

One Guest - An employee is allowed to bring one guest per visit without special permission or prior arrangement. The guest must be accompanied by the employee.

Two to Five Guests - Advance arrangement for two to five guests may be made at the Recreation Office. (No more than five guests per employee is ever permitted.) When such an arrangement is made, the Recreation Office issues an admission card stating the sponsor's name and life number, the number of guests permitted, the date of visit, and the facility to be visited. Guests must be accompanied by the employee, who will be requested to show the admission card at the main gate and at the swimming pool ticket desk.

Sponsoring employees are responsible for their guests during the entire time they are on site.

Robison And Laredo In Concert

Flutist Paula Robison and pianist Ruth Laredo are returning to Brookhaven to present a concert on Tuesday, May 12, at 8:30 p.m. in Berkner Hall.

The two noted musicians, who are among the most popular performers to appear in BERA's concert series, will perform both solo pieces and duets.

Paula Robison has established a solid reputation with audiences around the world, as well as with recording critics. In addition to her performances with the Chamber Music Society of Lincoln Center, of which she is a founding member, she regularly appears at the Brooklyn Academy of Music and Mostly Mozart and Caramoor Festivals. Her own three-concert recital series at Lincoln Center was a sellout.

Ruth Laredo, hailed as one of todays foremost pianists, has achieved distinction on three continents with her recital and concert performances and prize-winning recordings. She has appeared as soloist with many major U.S. orchestras, and has been called "astonishing" and "smashing, sensational" by the New York critics.

The program will include Poulenc's Sonata for flute and piano and Rachmaninoff's Four Preludes, Op. 32, for solo piano. The other solo pieces will be Berio's Sequenza for Solo Flute, and Selections from "The Bird Fancyer's Delight" for Solo Flute, first published by Richard Meares in 1717. Prokofiev's Sonata for Flute and Piano, D Major, Op. 80 will conclude the program.

Tickets for the concert will be available at the door. Admission prices are $6 for adults, $4 for students and senior citizens, $3 for those under 18.

Hospitality News

Mr. Steve Pradon, an Environmental Specialist with the Suffolk County Department of Parks, Recreation and Conservation, will be the guest speaker at the Hospitality Committee's morning coffee get-together on Tuesday, May 5, at 9:30 a.m., in the Brookhaven Center. There will be a slide presentation showing the many parks and recreational facilities on Long Island, followed by a question and answer session.

Coffee, tea and danish will be served. Please come and bring the children. Babysitting will be provided free of charge. We suggest you bring along a toy or two for your child to play with.

Cafeteria Menu

Week Ending May 8, 1981

Monday, May 4		
Beef barley soup	(cup)	.55
	(bowl)	.65
Chicken chop suey on rice		1.55
Scrambled eggs, sausage & fries		1.50
Hot Deli — Baked ham	(on bread)	1.65
	(on roll)	1.75
Tuesday, May 5		
Beef noodle soup	(cup)	.55
	(bowl)	.65
Roast chicken w/stuffing		1.55
Beef chili w/rice		1.55
Hot Deli — Barbequed beef	(on bread)	1.65
	(on roll)	1.75
Wednesday, May 6		
Mulligatawny soup	(cup)	.55
	(bowl)	.65
Veal pattie parmesan & 1 veg.		1.60
Salisbury steak & 1 veg.		1.60
Hot Deli — Grilled Reuben		1.60
Thursday, May 7		
Lentil soup	(cup)	.55
	(bowl)	.65
Hungarian goulash on noodles		1.60
Manicotti & 1 veg.		1.55
Hot Deli — Roast beef	(on bread)	1.65
	(on roll)	1.75
Friday, May 8		
Fresh vegetable soup	(cup)	.55
	(bowl)	.65
Stuffed fish & 1 veg.		1.55
Sauerbraten & potato pancakes		1.65
Hot Deli — Knockwurst	(on bread)	1.65
	(on roll)	1.75

New Trip Ticket

The Off-Site Trip Ticket form has been revised and is now available from the Stationary group in the Supply & Materiel Division. Both the old form 1369C and the new form 1369F will be accepted for a couple of weeks until everyone has had an opportunity to obtain the new forms.

In most instances, when a Government vehicle is taken off the BNL site, an Off-Site Trip Ticket must be completed. The rules covering the use of Government vehicles while outside the Lab are printed on the back of the form.

The major change in the form is the addition of the blanks in which to indicate mileage for "Odometer Out" and "Odometer In." This will provide a record of how many off-site miles a vehicle was driven. Another difference is that the new form has been printed on pressure sensitive paper to eliminate the need for carbon paper when filling out the required duplicate copy. Finally, of course, the old form was white; the new Off-Site Trip Ticket is yellow.

Runners Corner

There will be a meeting on May 6, at noon in Room D, Berkner Hall.

Remember that the spring 5 kilometer and 15 kilometer races are at the Lab on Sunday, May 17 at 10 a.m. For more information call Jeanne Penoyar, Ext. 2614; Ted Landry, Ext. 2959; or Bill Thomlinson, Ext. 3937.

Anyone interested in helping at the races is welcome. Bring your lunch.

A Rule For Runners

Lunchtime runners are welcome to run *almost* anywhere on the Lab's 5250 acres. One notable exception, however, is the ISABELLE site. Runners are asked to please do their running elsewhere.

Bowling

Pink League

Deb Johnson had another great night with games of 177/176/176 for a 529 series. Other good games were bowled by Marie Grahn 190, Karen Alberico 174, Renie Rosati 171, Fran Nusz 169/153, Maryann Larsen 167, Mary-Grace Meier 166/165, April Donegain 166, Ellie Adams 164, Fran Briening 153. The Lickety Splits are in first by 2 points.

Purple & White League

The Gropers won all 7 giving them a 9 point lead in first place. Ken Riker's 638 series was high for the night with games of 199/224/215. Ken Asselta had high game of 245/222/154 for a 621 series. Other high games were rolled by Vito Manzella 216, Jere Austin 213, Ed Sperry 201, Sharon Smith 194, Gerrie Riker 193, Joyce Pinelli 182.

Red League

The 76'ers' (3102 pins) took the Designers 11-0. R. Larsen (204/210) grossed 646, J. Morris (234) 655, M. McKenna (201) 636, and E. Sperry (200) 626. The Old Timers won 11-0 over the Freon Loaders by a forfeit. J. Fontana grossed 600, N. Baker 628. Isa Team won 11-0 over the Trouble Shooters. E. Sperry IV (218) grossed 655, J. Sauls 616 and M. Iarocci 608. The Strangers won 8-3 over the Sandbaggers. C. Bohnenblusch rolled a 207 and W. Vanzwienen grossed 611.

Green League

Congrats to the Light Source for winning the second half by defeating the Pinball Wizards 7-4. For the losers, R. Eggert bowled a 205 and T. Prach 207. The Sparks won 7-4 over the Blue Jays with H. Marshall rolling a 242. The Old Timers II were defeated by the Phoubars 7-4 and the Trouble Shooters lost 11 to Isa Team.

L.I. Industrial Tournament

Thanks to all the women that bowled this year. The final standing they achieved was tenth position, which is an improvement over last year when they finished thirteenth.

Classified Advertisements

Autos & Auto Supplies

73 AMC - Matador, 4 dr, a/t, good running cond, 15 mpg. $450. Joe Bush, Ext. 3284 or 736-2728.

72 CHEVY - wgn, V8, good cond, $600; 1968 Karmin Ghia eng good, body needs work. $600. 744-2552.

MOTORCYCLE TRAVEL TRUNKS - 1 small ABS plastic w/keys and hardware, $20; one soft vinyl w/hardware, $10; sissy bar w/pad, $10. R. Hildenbrand, Ext. 3273.

NEW TIRE - Michelin w/w on GM wheel, balanced, 225x15 (JR78-15), orig $95. Now $70 or best offer. Alyce, Ext. 5203.

76 HONDA MOTORCYCLE - CB400-F super sport, stock plus custom seats, Continental tires, many extras, mint cond. 473-1456.

78 RENAULT - LeCar, excel mpg, slight body damage, otherwise excel cond; 1977 Yamaha XS400, mags, 6 spd, very good cond, fairing. Ext. 7927 or 878-2891 after 6 p.m.

75 HONDA - 360CL, excel cond, 10,200 mi, 6 spd, elec start, rack. $850. 929-6421 after 5 p.m.

73 PLYMOUTH SATELLITE - needs some body work, fair running cond. $650. Barbara, 473-8060 after 6 p.m.

74 CHEVY MALIBU - a/t, p/s, p/b, good running cond, am/fm stereo, reg gas. $1,200. 654-5169 after 5 p.m.

70 HONDA - 450cc, 8" ext, Sportster wheel, needs work. $425. Ken, 399-4988.

75 PONTIAC ASTRE - 4 cyl, 4 spd, p/s, 48,000 mi. $800. Bill, Ext. 3308.

55 FORD - custom, V8, 4 dr, a/t, 77,000 mi. Irv Meyer, Ext. 3038 or 929-4326.

78 KAWASAKI - 175cc, excel cond, extras. $675. Laurence, 744-5079.

75 FORD F-250 CAMPER - Special pickup truck w/10½' Hornet Camper slide-on, self contained, many extras. Will sell camper separately. 929-4840.

76 PINTO - runabout 3D, 4 cyl, a/t, excel cond, good mpg. $1,950. Ext. 3233.

78 TOYOTA - Land-Cruiser, very good cond. Asking $7,000. John, 694-4356.

77 FORD LTD II WAGON - V8, a/t, p/s, a/c, 28,000 mi, good cond. $3,000. Ext. 4045 or 289-5770 after 6 p.m.

67 DODGE VAN - new 6 cyl eng, 3 spd, new brakes, good on gas, good cond; also truck or van side mirrors. $15. 399-4213 or Ext. 4034.

80 MOTORCYCLE - Honda Twinstar, brand new, many extras. Ext. 2482.

68 FORD SERVICE MANUAL - $10; locking gas tank cap, $3. Pete, 475-0831.

72 FORD BRONCO - 3 wheel dr, 3 spd, 302 eng, green/white, trailer hitch. 732-3350.

72 TAG-A-LONG CAMPER - self contained, sleeps 6. $1,500. 473-8270 after 3 p.m.

74 VW DASHER - runs good, high mileage, asking $800; CB equip, 23 channel Midland CB and antenna. $25. Ext. 4709.

CAMP TRAILER - pop-up hardtop, sleeps 8, tow w/6 cyl at 2 mpg less. $500. P. Fallon, Ext. 3043 or 878-2266.

68 FORD FAIRLANE - s/w, good running cond, clean. $395. Larry, 751-2149 after 6 p.m.

CORVETTE PLEXIGLASS T-TOP - smoke, one side only. $20. Ext. 7941.

76 CADILLAC SEDAN leather int, a/c, p/s, p/b, very good cond. $2,995. 929-4529.

73 CHEVY MALIBU - p/s, new p/b, new tires, good running cond. $900. Linda, Ext. 4478 or 728-6056.

76 AMF SCAMPER - motor home, 22', CB am/fm, 17,000 mi, rear-bath, 3 way frig, p/s, p/b, a/c, a/t. $10,500. Jim, Ext. 4040 or 289-0876.

73 CUTLASS - 4 dr, V8, am/fm, a/c, p/s, p/b, 55,000 mi, many extras. $1,100. Linda, Ext. 4263.

73 OLDS CUTLASS SUPREME - 2 dr. $975. 331-2849.

72 AMC HORNET very good cond, a/c, new parts, 2 snows, leaving country. $700. Mark, Ext. 4372.

79 LAMBRETTA SCOOTER - 150cc, very low mi, rated at 120 mpg, mint cond. $1,100. 473-1456.

NORRIS TRAVEL TRAILER - 19½ ft, sleeps 8, fully self contained, battery and complete tow package incl. Asking $1,900 or will consider trade of older pop-up plus cash; 1979 Elsinor 250, less than 5 hrs riding time, immac. $1,200. 473-9180 after 4.

Boats & Marine Supplies

1976 20' BAYLINER - 4 cyl, i/o, cabin w/accessories, trailer w/braking system. $7,000. John, Ext. 3397.

16' FIBERGLASS - trailer 75 hp Chris Craft tri-hull. $1,500. 744-2552.

16' RUNABOUT - fiberglass, good cond w/heavy duty tilt-bed trailer. $450. Jim, Ext. 4502.

14' FIBERGLASS - boat w/trailer. $300. 929-4064 after 6 p.m.

8' PRAM - oars, oarlocks, lifejackets, good cond. $100. Ext. 2880 (T, W, Th) or 286-8915 (M, F, Sat, Sun)

12' SAILBOAT - O'Day Widgeon double hull fiberglass, excel cond. $900. Torn, Ext. 2963 or 689-9228.

MARINER - 8 hp outboard, used less than 10 hrs, under warranty, long shaft, must sell. $550. Ext. 4638.

23' FIBERGLASS - fishing boat, cuddy cabin w/head, sleeps 2, Chrysler slant 6, i/o., nice shape. $3,000. neg. Ext. 3284 or 736-2728.

16' SHARPIE - w/glassed bottom w/1974 Dilly boat trailer. $400. Russ, 325-0563.

ELECTRIC TROLLING MOTOR - excel cond. $50. Ext. 2290.

16' COMET - wooden sail boat trailer (new springs, bearings), motor, oars. Paul, Ext. 2071 days or 928-8171 eves.

16' RUNABOUT - 65 hp Mercury outboard, Cox trailer, new power winch, 6 channel CB, good cond. $1,400. Ext. 3319.

BOTTOM PAINT - 2 qts Interlux "Bottom Kote" just purchased. $19 ea. Bob Wieser, Ext. 7197.

GAS TANKS - (2) "Mirax," new 12"wx16"hx18"l, 12 gal. $45 ea. Ext. 3277.

AQUA-CLEAR-FEEDERS - for marine eng cooling systems Model 6-C (145-250hp) w/crystals, brand new. $100 pr. Ext. 4976.

25' FIBERGLASS - Wheeler skiff, 225 hp Chrysler f/w cooled dual controls, flying bridge. $7,500. 286-4504 eves.

Yard Sales

YARD SALE - May 2 and 3 (rain date May 9 and 10). Yaphank-Middle Island. Yaphank corner Walters St. Lots of stuff.

GROUP YARD/GARAGE SALE - May 1, 2 and 3. No. Halsey Manor Rd, Manorville. Household, tools, lots more.

YARD SALE - May 2 and 3, 9 am - 5 pm. Highview Dr, Wading River.

Miscellaneous

AKAI TAPE DECK - R/R, 24 tapes, headphones, demagnetizer. $200. Pete, Ext. 4782 or 289-7218.

KENMORE WASHER - new timer, 2 motors, medium size. $70. Jeff, Ext. 4661.

FOR ADOPTION - dog, collie-mix, friendly; male cats, orange persian-mix male, calico female, spayed. Regina, 698-3952.

BICYCLE - men's 10 spd, fair cond. $50. Dinos, Ext. 4666.

TURNTABLE - Dual Model #1019 w/new Shure cartridge. As is, $50. Alyce, Ext. 5203.

TELETONE PHONOGRAPH - good for child or preteen, brown and white, good cond. $15. Donna, Ext. 4007.

LIVING ROOM SET - modern couch, chair, glass coffee table, 2 glass end tables, very good cond, together or separate. $200. 588-4641.

MATTRESS - and box spring, full size, good to excel cond. $25. 475-6938.

MOTORCYCLE HELMET - new attic stairs; ladies Bulova diamond watch; Krementz locket. Kathy, Ext. 4615.

SEWING MACHINE - Singer w/walnut cabinet, special disks for decorative stitching. 744-8334 after 6 pm.

ANDERSON WINDOWS - 20"x34", $10; wht counter top w/splash 24"x99¾", $25; wht bar top 14¼"x 108⅜", $15; TV Motorola B&W, 23", $20. Ron, Ext. 4989 or 289-1003 wk nights.

US DIVER - "Spoiler" fins. $20. Ext. 2501.

DINING ROOM SET - 3 piece, 6 chairs, 3 table leafs and cover. $550. 981-4419.

WETSUIT TUNIC - (short sleeves and legs) good cond. $30. Greg, Ext. 7960.

COMPRESSOR - 1½ hp/2 cyl, Westinghouse 60 gal tank. $300. 698-8286 after 6 pm.

TENNIS RACQUET - Prince Classic 4⅝", like new, special stringing. $40. Paul, Ext. 2023.

REFRIG - GE 19 cu ft avocado, side by side, 4 yrs old, perfect cond. Best offer. Ann, Ext. 4959.

ORIENTAL RUG - 9x12; rosewood round dinner table, 5 ft w/8 wood chairs. 667-0995 eves.

POOL - 16'x4' round above ground, filter, ladder, and access. $450 complete. Linda, Ext. 5141.

ORGAN - Hammond M-111 Spinet, lt mahog, excel cond. $750. Call 473-2523 eves or wkends, moving.

1½ GAL PUMP - garden sprayer, galvanized, excel cond. Ext. 4505 or 928-2803.

AIR COND - 5,000 BTU Kenmore, 115 VAC, hardly used. $100. Ask for Ruth, 667-7314 anytime.

DEEP FREEZE - Coldspot chest type. Best offer. Bruce, Ext. 4179.

LIVING ROOM FURNITURE - marble top end tables (2) and coffee table; also (2) fireside chairs, upholstered; dining rm set, china closet, server, tea wagon, 6 chairs, table opens to seat 12, all excel cond. 475-0867.

AIR COND - Frigidaire Model A5-LC 4950 BTU, 7.5 amps, 900 watts, used ½ season. $70. Ext. 7941.

CLARINET - excel cond w/case. $75. Norman, Ext. 2047 or 472-3985.

PING PONG TABLE - ¾" partboard folding. $50. Bob, Ext.4201.

PLANTS AND FLOWERS - indoor/outdoor, very large selection. Ext. 4612.

TV - 19" color Admiral solid state, excel. $175. 924-7025.

STEREO SYSTEM - w/turntable. Hersh, Ext. 2841.

TW - B&W 21" w/pine cabinet, $85; pine end table, $75; knotty pine hutch, $250. 744-6063.

EVERGREEN - fir and spruce trees, 20" to 40", U-dig, 2 for $7; Ford cultivator, 3 point hitch, $150. 727-1617.

BICYCLE BASKET - double for rear wheel, $8; single for handle bar, $6; electric heater, Edison fan-forced, 1320 w in orig box, $20. Claire, 281-2002.

VACUUM CLEANER - $20; iron, $20; baby stroller, $20; infant seat, $15; cassette recorder Sony am/fm mono 2-way speaker, 1 yr old, paid $95, now $40; TV Magnavox 24" color sonsole, good cond. $120. Ext. 7664/4690.

FOR BABY - automatic swing, perfect condition. $10. Mona, Ext. 2347.

LIVING ROOM - 3 piece sectional, excel cond. $250. 588-3792 after 4 pm.

REFRIGERATORS - in good cond, 17 cu ft, $35; 14 cu ft, $20; also clothes washer, free. Tom, Ext. 3128.

VITAMINS - for the entire family. Catalog available. Emma, Ext. 5154 or 399-2131 after 5 pm.

ZENITH - 8 trk recorder/player for home, excel cond. $25. Karen, Ext. 2907.

ELECTRIC STOVE AND OVEN - 4 burner, Hot Point, very good cond, $100; Whirlpool, never used, orig cost $200. Sell for $125. 727-1588 after 4 pm.

AIR CONDITIONER - Sears Cold-Spot, 6,000 BTU, new cond, $90; 5 ft s/s sink top w/basin and faucet, new. $100. Pete, 475-0831.

BICYCLE 21" Motorbecane, vitus D/B frame, brand new condition. Ext. 5221.

POOL FILTER - s/s sand filter with 1 hp motor, 3 mo old. $75. 281-2748.

CONSOLE PIANO - and French Victorian bed, solid carved walnut. Also hand made large afghans. 472-0509.

FIREPLACE ITEMS - glass doors, $25; brass screen (36"x27" opening), $10; air cond, old but works, $35; push-type lawnmower, $15. John, Ext. 3292.

Real Estate

Real Estate advertised for sale or rent is available without regard for the race, color, creed or national origin of the applicant.

For Sale

RIVERHEAD AREA - mobile home, 10x50, 1 bdrm, stove, refrig, washer/dryer, tool shed, covered patio. $8,000. Ext. 3485.

MEDFORD - 1/3 acre, Cape 4-5 bdrms, 2 baths, den w/fp, l/r with coal stove, large eik, formal d/r, 18x36 in grnd pool, assumable mortg. $43,900. Jack, Ext. 4254 or 289-6708.

BELLPORT VILLAGE - 4 bdrm hi-ranch, l/r, f/r, eik, appl, large deck, 1½ baths, short walk to schools, tennis, golf. Will hold first mortg. $43,000. Ext. 3502 or 286-8166 after 5 p.m.

HUNTER MT VICINITY - cabin, 24'x24', 2 wooded acres, 2 sheds, Franklin fp, elec, chemical toilet, 45 min from Hunter Mt, excel hunting. $13,500. 698-3952 after 5 p.m.

YAPHANK - ranch, lakefront acre, 3 bdrms, eik, l/r, d/r, den, fp, fin bsmt, garage, deck, shed, circular driveway, landscaped. $72,000. 862-6259 after 6 p.m.

EAST MORICHES - custom built, 5 bdrm, 2½ baths, kitchen, d/r, eating area, l/r w/fp, 2 porches, full basement w/fp, garage, fully landscaped, 1 acre, fruit trees, blue spruce, etc. slate patio, beach and marina rights, 1 mi to beach. 7½% interest, job transfer, sacrifice. $85,000. 878-1630.

SHOREHAM - north of 25A, 25-year old cape in established neighborhood, 3 bdrms, study, finished basement, garage, on 1/3 acre, private beach rights. Owner financing available, $52,500. 744-5801.

For Rent

MEDFORD - 1 room fully furnished, 8 mi from Lab, includes all util. Refrig, washer/dryer, cooking facilities. $275/mo. 286-2899 after 6 p.m.

MIDDLE ISLAND - furnished room(s), 12 min from Lab, a block from Spring Lake Golf Course, priv entr, includes: util, refrig, washer/dryer, cooking facilities can be arranged. 924-7972.

MT. SINAI - sublet 2 bdrm furnished house, 6 to 9 mo, $475/mo plus util. From Aug 1st, unsuitable for children. Water three sides. 282-2118/928-8579.

BERKSHIRES CHALET - 3 hrs from NYC; 3 bdrms, 2 baths, fully equipped kit, elec heat, deck w/spectacular view, near lake, hiking trails, near ski areas, cross-country skiing on property. ½ hr from Tanglewood Theater. 929-6946 after 6 p.m.

EAST SETAUKET - near SUNY, attractive studio apt suitable for one, priv entr, a/c, w/w carpet, fp. $275/mo pays all. 751-7491 eves.

BELLPORT VILLAGE - 3 bdrm ranch, full bsmt, 2 car garage. $350/mo. 286-0095.

RIDGE - fully furnished 2 bdrm house for May-July, 5 min from Lab. $400 plus utilities. 744-7904.

Wanted

USED PANELING - 7 plus sheets, wood grain; used post and rail fencing, any amount; asbestos shingles, tan, white. Bill, 698-4882.

BICYCLE - 5 or 10 spd, good cond. Kurt, Ext. 4116 or Tina, 821-0104 after 3 p.m.

VENDORS - for church fair on May 30. 929-4923.

TRAINS - Lionel, American Flyer, accessories, any cond brings good price. Carole, Ext. 3362 or 924-4097 eves.

LEFT-HAND MITT - baseball/softball. Anand, Ext. 2117 or 928-5529 eves.

MOTORCYCLES - bent or broken, any age or cond. Kevin, 281-8031.

TRAINS - Lionel, any "O" gauge or "027" gauge cars, track, and equip. Frank, Ext. 3120.

INFORMATION - from owners of coal-fired add-on furnace, regarding same. Please call Bob, Ext. 2104 or 928-3863.

BUSINESS ASSOCIATE - develop excel 2nd income, no investment required. Call for appt 698-5861 after 7:30 p.m.

PORT-A-CRIB - Jim, Ext. 2957 or 286-0796.

MUSICAL INSTRUMENTS - old or unusual concertinas, banjos, mandolins, zithers, etc. JP, Ext. 3403 or 929-8809.

LACROSSE STICKS - (2) good cond. Bob Moore, Ext. 7784.

HELP NEEDED - to run bicycle race on May 31. Gerry, Ext. 4841.

BABYSITTING JOB - teenager looking for babysitter/mother's helper job for the summer. Coram, Selden, Centereach area. 732-5829.

JOHN DEERE - 110 Riding Mower, 1972-3-4, used or abused, for parts or restoration. Jack, Ext. 3261.

HELLMAN'S MAYONNAISE JARS - one quart size. Frank, Ext. 2311.

OLD PANTY HOSE - for church bazaar. D. Schroeder, Bldg. 134, Ext. 3327.

HOUSE - 3-4 bdrm house to rent, 1 yr beginning Sept for visiting scientist and family. Ext. 3786.

SPANISH LANGUAGE BOOKS - any kind, for Peace Corps couple establishing library, rural Chile. J. Wall, Ext. 3372.

PEOPLE INTERESTED - in earning money in your spare time. We show you how. No obligation. Jean, 363-2497.

Car Pools

SAYVILLE - Broadway area, on time, to start or join. Linda, Ext. 5141.

PATCHOGUE - on time, via So. Country Rd. Opening for paying rider. Alyce, Ext. 5203.

STONY BROOK/STRATHMORE - existing car pool looking for rider/driver. Morris, Ext. 4188.

BELLPORT/E. PATCHOGUE - need one person to complete 4 person car pool. Jim, Ext. 3851 or 286-2557.

MATTITUCK - have car, wishing to join 4/5 person car pool. Bill Stars, Ext. 4278 or 298-9648 eves.

RONKONKOMA - 1 driver to join existing car pool near LIE exits 59, 60 and 61. Victor, Ext. 7154.

SETAUKET - need 4th member to complete existing car pool. Dave, Ext. 2908.

E. SETAUKET/PT. JEFF. AREA - needs 5th member. Ex-member thinks we're great. Ext. 7790.

Lost & Found

LOST - gold wedding ring w/engraving (on softball field No. 5 4/22/81). John, Ext. 4510.

LOST - key ring and keys, leather material, says "David." Ext. 3743.

Services

Services are listed as a courtesy to BNL employees. They are neither screened nor recommended by the *Bulletin*.

PROFESSIONAL TYPING - Debbie, 727-5475.

HOUSE PAINTING - interior/exterior, professional, quality materials, insured. Bob, 289-7657 after 6 p.m.

DISCOUNT - custom, performance parts, accessories, for auto, truck or van. Lowest prices. Hans, 281-5563.

HOUSE SITTING - FREE, any period May 18 to Sept. 15. Enjoy vacation, Peace of Mind. J. Allentuck, Ext. 2412.

PIANO TUNING - and repair, reasonable rates and conscientious service. Carol, 751-4985.

ASPHALT PAVING - and sealing. Bob, 475-4382.

CARPETS INSTALLED - quick dependable service, repairs, free estimates. Jim, 821-0187 after 5 p.m.

TILE WORK - cement, terrazzo, tile. Reasonable rates. Don, 281-8848 or John, Ext. 3292.

DIRECT SECURITY - burglar and fire alarm hook up, residential and commercial. For info, Debbie, Ext. 2896.

FREE MEDITATION CLASS - starting Wednesday, May 6, 5:15 to 6:15. Lynn, Ext. 3811 or Ext. 3183.

PROFESSIONAL TYPING - Ext. 2484 or 289-9560.

BABYSITTING - my home, near N. Shirley area. Reasonable. 399-4590.

SANDBLASTING - trailers chassis, any kind equipment w/wo primer coat. Reasonable rates. 744-3968 after 4 p.m.

TIRES - service and repairs. Lunch time only. Fred Usack, Ext. 4798.

HAND CANE - and fiber rush. Reasonable rates. Jim, Ext. 5025 or 821-1704 after 5 p.m.

Classified Ad Policy Deadline is 4:30 p.m. Friday for publication Friday of the next week.